

Hygienic Assessment of Microclimate Indicators in the Main Departments of the Livestock Complex

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Abstract:

Relevance of research: Animal husbandry complexes in the building there is microclimate indicators evaluation. Animal husbandry in complexes main microclimate indicators room inside temperature, air relative moisture, ammonia, carbonate anhydride and hydrogen sulfide concentration and of air movement speed. Animal husbandry in complexes microclimate parameters control to do and manage of animals high productivity of provision important factor is considered. The same at the time in our country animal husbandry in complexes microclimate parameters complex control to do systems there is not ventilation. Systems one or two parameter with managed. Normalized parametric indicator - in the warehouse ammonia concentration. Various factors effect as a result of the building volume according to ammonia concentration up to 1.5-2.0 times has been difference does. This deficiency eliminate reach of the room the most carbonated places clean the air delivery to give with local ventilation organize to do Demand does. Received laboratory of information statistics analysis that's it showed that it is closed buildings inside ammonia of concentration average value of $0.733 \text{ mg} / \text{m}^3$, standard deviation $s = 0.134 \text{ mg} / \text{m}^3$, change coefficient is 18.3% organize does.

Introduction

Research Objective: Unsuitable microclimatic factors affecting workers in animal husbandry complexes and animal husbandry, impact on workers' health.

Material and methods:

In the course of the research, the harmful factors affecting livestock workers were checked with the help of noise, high and low temperature, humidity, air movement speed using special devices (psychrometer, anemometer, thermometer, barometer, thermometers).

Research results:

In order to determine the concentration of ammonia in the buildings of livestock complexes, laboratory measurements were carried out for 5 days, the average values

of the concentration at the measurement points are given in table 1 (table). In general, the concentration of ammonia, depending on the weather conditions (wind speed and direction, air temperature and humidity), is from 1.16 to 9.86 mg / m³, the background natural value is from 0.68 - 0.72 mg / m³ we can say that it has changed. A significant effect of wind speed and direction, outdoor air temperature on the level of ammonia concentration can be seen by comparing the data of 1 and 3 days. Thus, on the first day of the study, the maximum concentration of ammonia with a wind speed of 6 m/s was 4.92 mg / m³, which is about 2 times lower than on the third day, where its maximum concentration is at a wind speed. It was 9.86 mg/m³ with an insignificant decrease of 2 m/s.

Measuring point	Ammonia concentration mg/m ³				
	1 day	2 days	3 days	4 days	5 days
1	4.52	5.75	6.45	4.23	5.32
2	3.69	6.52	7.25	4.56	5.52
3	4.92	6.34	6.48	4.57	5.47
4	2.45	5.60	8.56	6.24	5.84
5	3.12	8.93	9.86	9.46	7.36
6	2.86	6.45	8.78	7.63	7.08
7	1.16	4.80	6.42	7.16	6.84
8	2.80	4.38	7.25	7.18	6.42
Microclimate parameters					
Temperature	-2, 4	- 3.6 _	-7.0	-9.5	-8.7
Relative humidity %	8 2	9 5	7 4	640	88
Air velocity m/s	6.0 _	3.0	2.0 _	2.0	4.0 _
Concentration of NH ₃ (ammonia) in mg/m ³	0, 6 8	0, 6 8	0.67	0, 6 5	0.72

Ammonia concentration in the warehouse and outdoor air parameters

of the livestock complex based on laboratory data processing , where Y 1-8 ammonia concentration 1-8 points, mg/m³, respectively; X 1 - Air movement speed m/s in the range of 2-6 m/s; X 2 - the outside air temperature was determined in the range of -2.4 ÷ - 9.5 ° C.

The amount of dust in the air of workplaces in buildings is of great importance. Their amount is higher than the specified amount as a result of livestock feeding and their movement. Dusts are mainly composed of organic ingredients, and besides affecting the respiratory organs, they have an allergic effect due to the presence of micelles, fungal spores, antibiotics, and animal fur.

Dust in the buildings of livestock complexes has a very complex composition and consists of mineral and organic components. The mineral component is soil dust, which is introduced into feed, especially roughage, transport, and animals themselves. This powder contains free silicon dioxide in the amount of 0.5-8 percent. The main component of the dust is the organic component that determines the hygienic properties of the dust of livestock buildings. Effectively increasing the growth and productivity of animals in livestock complexes is balanced concentrated feed, including feed protein, vitamin concentrates (B group, vitamins K, used in industrial livestock, PP, D, etc.), important amino acids, enzymes, antioxidants. These additives are mainly products of microbiological synthesis [VV Platonov, 2010].

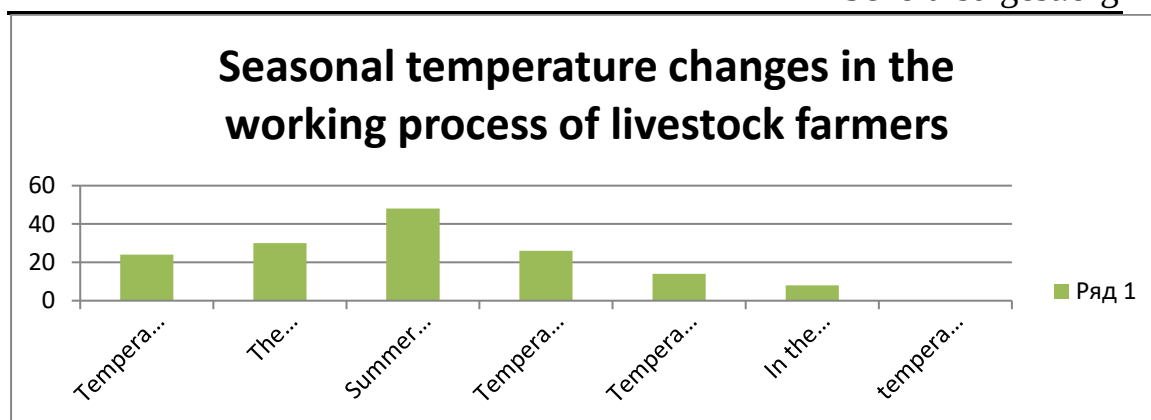
The composition of the dust of modern livestock complexes determines its pathogenic properties - fibrogenic, allergenic, sensitizing and toxic. In this case, the allergenic effect on the human body comes to the fore [MA Vlasov, 2011].

According to Shagalina AU (2015), The amount of dust in the feed shop for adding additives to the feed and storing combikorma is 174-650 mg/m³.

The amount of dust in the workplaces of livestock farms depends on the conditions of keeping livestock and their age. In addition, due to the lack of improvement of maintenance technology, ineffective operation of air exchangers, low-quality cleaning of rooms, improper design of rooms, dust appears in workplaces [3].

The amount of dust in workplaces by aspiration-measurement method (GOST 12.1.005-88 "Общие санитарно-гигиенические требования к системам кондиционирования и кондиционирования воздуха"; GOST 12.1.04-84- "Воздух рабочей зоны" (метод измерения концентрации вредных веществ индикаторными трубками) is carried out. The result of the inspection is evaluated using San P i N 0294-11 entitled "Гигиенические нормативы предельно-допустимые концентрации (ПДК) вредных веществ в воздухе рабочей зоны". It's going to happen.

The results of the investigation revealed the following: in summer, the maximum temperature in livestock farms is 41-44 C°, air humidity is 50%, in autumn the air temperature is 18.7 C°, air humidity is 58.8%, air movement speed is 0.35 -0.51 m/sec [1,2].



The results of the inspection showed that the air temperature constantly changes depending on the seasons. As a result of negative factors affecting the body, workers may experience heat stroke in summer, inflammatory diseases of the upper respiratory tract in winter, varicose veins in the legs due to heavy work, and various allergic diseases [11,12].

Noise is one of the physical factors affecting livestock complexes. During scientific research, measurement of the noise level during work showed that during the milking of cows, the noise level emitted by the milking machine was high - 98 db, which is 18 db higher than the maximum permissible noise level [3,4,6].

Against the background of the intellectualization of work, there is an increase in the harmful effects of average permissible noise (below 80 db). In such a process, noise does not cause intensity, but it increases irritability and fatigue, increasing the length of work can lead to general somatic diseases[11,12,13].

Summary.

1. Urgently requires qualified scientific analysis and development of scientifically based and effective sanitization measures to improve the working conditions of workers around livestock complexes and farms, to protect atmospheric air . The sanitary regulations No. 0350-17 "On the protection of atmospheric air in residential areas of the Republic of Uzbekistan" approved by the Chief Medical Officer of the Republic of Uzbekistan for livestock complexes and farms in relation to population centers are included in the important sanitation measures. organization of design and construction works in accordance with the requirements of the sanitary protection zone.
2. of ammonia in buildings concentration from 20 mg / m³ not to exceed provide need _ This deficiency eliminate reach for clean the air maximum level delivered to give with local ventilation system organize to do need.

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